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PATENT  
Docket No. 316082000121

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Assistant Commissioner for Patents, Washington, D.C. 20231, on May 12, 1999.

  
Joanna K. Watts

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the application of:

Michael D. Dan et al.

Serial No.: 09/194,164

Filing Date: November 20, 1998

For: ANTIGEN BINDING FRAGMENTS  
THAT SPECIFICALLY DETECT  
CANCER CELLS, NUCLEOTIDES  
ENCODING THE FRAGMENTS, AND  
USE THEREOF FOR THE  
PROPHYLAXIS AND DETECTION OF  
CANCERS

Examiner: Unassigned

Group Art Unit: Unassigned

**MAY 24 1999**  
MATRIX-CUSTOMER  
SERVICE CENTER

**INFORMATION DISCLOSURE  
STATEMENT UNDER 37 C.F.R. § 1.97**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO-1449. Copies of the documents were previously submitted in an Information Disclosure Statement dated October 7, 1997, directed to the related application Serial Number 08/862,124 (directed to related application Serial Number 08/657,449) and, accordingly, copies are not included herewith. This

protocol conforms with 37 C.F.R. §1.98(d) and M.P.E.P. 609(A)(2). The Examiner is requested to make these documents of record in the application.

**MAY 24 1999**

This Information Disclosure Statement is submitted:

**MATRIX CUSTOMER  
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- ☒ Within three months of the application filing date or before receipt of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

Applicants would appreciate the Examiner initialing and returning the Form PTO-1449, indicating that the information has been considered and made of record herein.

This Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing 316082000121. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

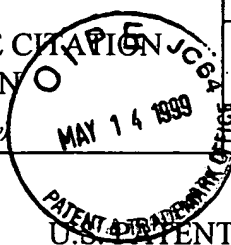
Dated: 11 May 1999

Respectfully submitted,

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	Applicant  Michael D. Dan et al.	
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## U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
	1.	06/18/74	3,817,837	Rubenstein et al.			
	2.	11/26/74	3,850,752	Schuurs et al.			
	3.	02/17/76	3,939,350	Kronick et al.			
	4.	12/07/76	3,996,345	Ullman et al.			
	5.	06/23/81	4,275,149	Litman et al.			
	6.	07/07/81	4,277,437	Maggio			
	7.	12/28/82	4,366,241	Tom et al.			
	8.	10/21/86	4,618,477	Babu et al.			
	9.	07/28/87	4,683,195	Mullis et al.			
	10.	07/28/87	4,683,202	Mullis			
	11.	06/28/88	4,754,065	Levenson et al.			
	12.	01/24/89	4,800,159	Mullis et al.			
	13.	01/08/91	4,983,586	Bodor			
	14.	03/26/91	5,002,935	Bodor			
	15.	05/21/91	5,017,566	Bodor			
	16.	10/06/92	5,153,179	Eibl			
	17.	12/14/93	5,270,202	Raychaudhuri			
	18.	12/12/95	5,474,755	Hanna, Jr. et al.			
	19.	06/25/96	5,530,101	Queen et al.			
	20.	12/17/96	5,585,089	Queen et al.			

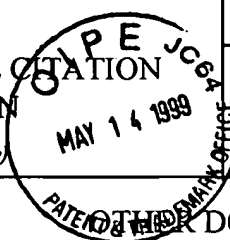
## FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO	
	21.	04/04/91	WO 91/04014	PCT				
	22.	04/15/93	WO 93/07286	PCT				
	23.	03/06/96	0 699 755	Europe				

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Filing Date November 20, 1998		Group Art Unknown



OTHER DOCUMENTS		
Examiner Initials	Ref. No.	Title
	24.	Marchant, "Contemporary management of breast cancer" <i>Obstetrics and Gynecology Clinics of North America</i> (1994) 21:555-560.
	25.	Colditz, "Epidemiology of breast cancer" <i>Cancer</i> (1993) 71:1480-1489.
	26.	Kohn et al., "Molecular insights into cancer invasion: Strategies for prevention and intervention" <i>Cancer Res.</i> (1995) 55:1856-1862.
	27.	Koda et al., "Three step radioimmunodiagnosis of colon cancers using murine and human monoclonal antibodies" <i>Am. J. Gastroenterol.</i> (1995) 90: Abstract No. 357.
	28.	Hall, "Monoclonal antibodies at age 20: Promise at last?" <i>Science</i> (1995) 270:915-916.
	29.	Schattner, "The origin of autoantibodies" <i>Immunol. Lett.</i> (1986/1987) 14:143-153.
	30.	Lutz et al., "Naturally occurring autoantibodies to skeletal proteins from human red blood cells" <i>J. Immunol.</i> (1982) 128:1695-1699.
	31.	Guilbert et al., "Naturally occurring antibodies against nine common antigens in human sera" <i>J. Immunol.</i> (1982) 128:2779-2787.
	32.	Glassy, "Immortalization of human lymphocytes from a tumor-involved lymph node" <i>Cancer Res.</i> (1987) 47:5181-5188.
	33.	Fischer et al., "Paucity of humoral response in patients to glioma-associated antigen(s): Antigen localization by immunofluorescence" <i>Immunobiol. of Proteins and Peptides VI</i> (1991) M. Atassi, ed., Plenum Press, NY, pp. 263-270.
	34.	Skerra, "Bacterial expression of immunoglobulin fragments" <i>Curr. Opin. Immunol.</i> (1993) 5:256-262.
	35.	Fiedler et al., "High-level production and long-term storage of engineered antibodies in transgenic tobacco seeds" <i>Bio/Technology</i> (1995) 13:1090-1093.
	36.	Zhang et al., "A human monoclonal antimelanoma single-chain Fv antibody derived from tumor-infiltrating lymphocytes" <i>Cancer Res.</i> (1995) 55:3584-3591.
	37.	Barbas, "Synthetic human antibodies" <i>Nature Med.</i> (1995) 1:837-839.
	38.	Yoshikawa et al., "A human monoclonal antibody recognizing a surface antigen on stomach cancer cells" <i>Jpn. J. Cancer Res.</i> (1989) 80:546-553.
	39.	Yamaguchi et al., "Cell-surface antigens of melanoma recognized by human monoclonal antibodies" <i>Proc. Natl. Acad. Sci. USA</i> (1987) 84:2416-2420.
	40.	Haspel et al., "Generation of tumor cell-reactive human monoclonal antibodies using peripheral blood lymphocytes from actively immunized colorectal carcinoma patients" <i>Cancer Res.</i> (1985) 45:3951-3961.

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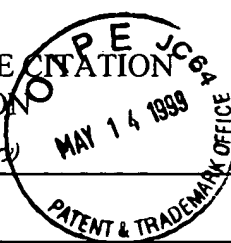
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## OTHER DOCUMENTS

Examiner Initials	Ref. No.	Title
	41.	Cote et al., "Specificity analysis of human monoclonal antibodies reactive with cell surface and intracellular antigens" <i>Proc. Natl. Acad. Sci. USA</i> (1986) 83:2959-2963.
	42.	Glassy, "Immortalization of human lymphocytes from a tumor-involved lymph node" <i>Cancer Res.</i> (1987) 47:5181-5188.
	43.	Borup-Christensen et al., "Human-human hybridomas generated with lymphocytes from patients with colorectal cancer" <i>Cancer Detect. Prevent. Suppl.</i> (1987) 1:207-215.
	44.	Kan-Mitchell et al., "Tumor-reactive human immunoglobulin G monoclonal antibody from a melanoma patient" <i>Cancer Res.</i> (1989) 49:4536-4541.
	45.	Yoshikawa et al., "Human monoclonal antibody reactive to stomach cancer produced by mouse-human hybridoma technique" <i>Jpn. J. Cancer Res.</i> (1986) 77:1122-1133.
	46.	Olsson, "Human monoclonal antibodies in experimental cancer research" <i>J. Nat. Cancer Inst.</i> (1985) 75:397-403.
	47.	Larrick et al., "Prospects for the therapeutic use of human monoclonal antibodies" <i>J. Biol. Response Mod.</i> (1986) 5:379-393.
	48.	McCabe et al., "Preclinical studies on the pharmacokinetic properties of human monoclonal antibodies to colorectal cancer and their use for detection of tumors" <i>Cancer Res.</i> (1988) 48:4348-4353.
	49.	Cohen, "Cancer vaccines get a shot in the arm" <i>Science</i> (1993) 262:841-843.
	50.	Ditzel et al., "Immunoscintigraphy of colon cancers with the human monoclonal antibody COU-1" <i>Cancer</i> (1994) 73:858-863.
	51.	Alonso, "Human-human monoclonal antibody directed against tumor surface antigen in the treatment of human malignancy" <i>Am. J. Clin. Oncol.</i> (1991) 14:463-471.
	52.	Mack et al., "A small bispecific antibody construct expressed as a functional single-chain molecule with high tumor cell cytotoxicity" <i>Proc. Natl. Acad. Sci. USA</i> (1995) 92:7021-7025.
	53.	Cheresh et al., "Disialoganglioside GD3 on human melanoma serves as a relevant target antigen for monoclonal antibody-mediated tumor cytotoxicity" <i>Proc. Natl. Acad. Sci. USA</i> (1985) 82:5155-5159.
	54.	Cheresh et al., "Biosynthesis and expression of the disialoganglioside G <sub>D2</sub> , a relevant target antigen on small cell lung carcinoma for monoclonal antibody-mediated cytotoxicity" <i>Cancer Res.</i> (1986) 46:5112-5118.

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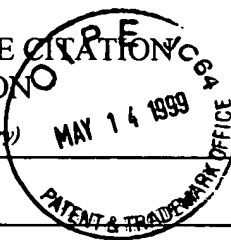


## OTHER DOCUMENTS

Examiner Initials	Ref. No.	Title
	55.	Murakami et al., "Human-human hybridomas secreting antibodies specific to human lung carcinoma" <i>In Vitro Cell. &amp; Dev. Biol.</i> (1985) 21:593-596.
	56.	Schadendorf et al., "A novel heteromorphous human cell surface alloantigen, gp60, defined by a human monoclonal antibody" <i>J. Immunol.</i> (1989) 142:1621-1625.
	57.	Pickering et al., "Human monoclonal antibodies to cytokeratins associated with squamous cell carcinoma" <i>Clin. Immunol. Immunopathol.</i> (1984) 32:253-260.
	58.	Hagiwara et al., "Human x human hybridoma producing monoclonal antibody against autologous cervical carcinoma" <i>Mol. Biol. Med.</i> (1983) 1:245-252.
	59.	Schlom et al., "Generation of human monoclonal antibodies reactive with human mammary carcinoma cells" <i>Proc. Natl. Acad. Sci. USA</i> (1980) 77:6841-6845.
	60.	Finn et al., "MUC-1 epithelial tumor mucin-based immunity and cancer vaccines" <i>Immunol. Rev.</i> (1995) 145:61-89.
	61.	Matsumoto et al., "Clinical phase I study of human monoclonal antibody, ACA 11 (CLN-IgG) against human malignant brain tumors" <i>The Clinical Report</i> (1994) 28:118-126.
	62.	Saleh et al., "Phase II trial of murine monoclonal antibody D612 combined with recombinant human monocyte colony-stimulating factor (rhM-CSF) in patients with metastatic gastrointestinal cancer" <i>Cancer Res.</i> (1995) 55:4339-4346.
	63.	Pastan et al., "Intrathecal administration of single-chain immunotoxin, LMB-7 [B3(Fv)-PE38], produces cures of carcinomatous meningitis in a rat model" <i>Proc. Natl. Acad. Sci. USA</i> (1995) 92:2765-2769.
	64.	Chaudhuri et al., "Human monoclonal antibody developed against ovarian cancer cell surface antigen" <i>Cancer</i> (1994) 73:1098-1104.
	65.	Thorpe et al., Monoclonal antibody-toxin conjugates: aiming the magic bullet" <i>Monoclonal Antibodies in Clinical Medicine</i> (1982) Academic Press, pp. 168-201.
	66.	Vitetta et al., "Redesigning nature's poisons to create anti-tumor reagents" <i>Science</i> (1987) 238:1098-1104.
	67.	Winter et al., "Man-made antibodies" <i>Nature</i> (1991) 349:293-299.
	68.	Olsnes et al., "Chimeric toxins" <i>Pharmac. Ther.</i> (1982) 15:355-381.
	69.	Chatal et al., "Clinical prospective study with radioiodinated monoclonal antibodies directed against colorectal cancer" <i>Monoclonal Antibodies for Cancer Detection and Therapy</i> (1985) Baldwin et al., eds., Academic Press, Chapter 8, pp. 159-180.

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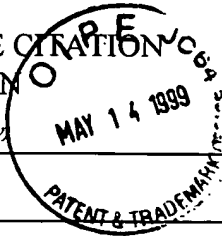
Examiner Initials	Ref. No.	Title
	70.	Jansen et al., "Efficiency and tolerance of the treatment with immuno-A-chain-toxins in human bone marrow transplantations" Monoclonal Antibodies for Cancer Detection and Therapy (1985) Baldwin et al., eds., Academic Press, Chapter 11, pp. 223-267.
	71.	Miltenyi et al., "High gradient magnetic cell separation with MACS" Cytometry (1990) 11:231-238.
	72.	Glaser et al., "Dissection of the combining site in a humanized anti-Tac antibody" <i>J. Immunol.</i> (1992) 149:2607-2614.
	73.	Tempest et al., "Reshaping a human monoclonal antibody to inhibit human respiratory syncytial virus infection <i>in vivo</i> " <i>Biotechnology</i> (1991) 9:266-271.
	74.	Shalaby et al., "Development of humanized bispecific antibodies reactive with cytotoxic lymphocytes and tumor cells overexpressing the <i>HER2</i> protooncogene" <i>J. Exp. Med.</i> (1992) 175:217-225.
	75.	Levitt, "Molecular dynamics of native protein" I. Computer simulation of trajectories" <i>J. Mol. Biol.</i> (1983) 168:595-620.
	76.	Bird et al., "Single-chain antigen-binding proteins" <i>Science</i> (1988) 242:423-426.
	77.	Posnett et al., "A novel method for producing anti-peptide antibodies" <i>J. Biol. Chem.</i> (1988) 263:1719-1725.
	78.	Tam, "High-density multiple antigen-peptide system for preparation of antipeptide antibodies" <i>Meth. Enz.</i> (1989) 168:7-15.
	79.	Fiedler et al., High level production and long-term storage of engineered antibodies in transgenic tobacco seeds" <i>Biotechnology</i> (1995) 13:1090-1093.
	80.	Brown et al., "Chimeric parvovirus B19 capsids for the presentation of foreign epitopes" <i>Virol.</i> (1994) 198:477-488.
	81.	Miyamura et al., "Parvovirus particles as platforms for protein presentation" <i>Proc. Natl. Acad. Sci. USA</i> (1994) 91:8507-8511.
	82.	Moss, "Vaccinia virus: A tool for research and vaccine development" <i>Science</i> (1991) 252:1662-1667.
	83.	Flexner et al. "Attenuation of live recombinant vaccinia virus vectors by expression of human interleukin-2" <i>Vaccines</i> 88 (1988) Cold Spring Harbor Laboratory, pp. 179-184.
	84.	Cockett et al., "High level expression of tissue inhibitor of metalloproteinases in Chinese hamster ovary cells using glutamine synthetase gene amplification" <i>Bio/Technology</i> (1990) 8:662-667.

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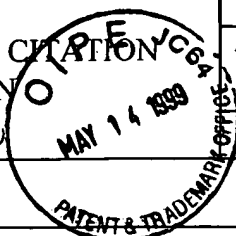
## OTHER DOCUMENTS

Examiner Initials	Ref. No.	Title
	85.	Douillard et al., "Monoclonal antibodies specific immunotherapy of gastrointestinal tumors" <i>Hybridoma</i> (1986) 5:Supp. 1:S139-S149.
	86.	Diener et al., "Specific immunosuppression by immunotoxins containing daunomycin" <i>Science</i> (1986) 231:148-150.
	87.	Greiner et al., "Recombinant interferon enhances monoclonal antibody-targeting of carcinoma lesions <i>in vivo</i> " <i>Science</i> (1987) 235:895-898.
	88.	Wolff et al., "The use of monoclonal anti-Thy <sub>1</sub> IgG <sub>1</sub> for the targeting of liposomes to AKR-A cells <i>in vitro</i> and <i>in vivo</i> " <i>Biochem. Biophys. Acta</i> (1984) 802:259-273.
	89.	Brown et al., "Chimeric parvovirus B19 capsids for the presentation of foreign epitopes" <i>Virology</i> (1994) 198:477-488.
	90.	Fletcher et al., "Recent advances in the understanding of the biochemistry and clinical pharmacology of interleukin-2" <i>Lymphokine Res.</i> (1987) 6:45-57.
	91.	Rabinowich et al., "Functional analysis of mononuclear cells infiltrating into tumors: Lysis of autologous human tumor cells by cultured infiltrating lymphocytes" <i>Cancer Res.</i> (1987) 47:173-177.
	92.	Rosenberg et al., "A new approach to the adoptive immunotherapy of cancer with tumor-infiltrating lymphocytes" <i>Science</i> (1986) 233:1318-1321.
	93.	Pizz et al., "Tumour regression after intralesional injection of interleukin 2 (IL-2) in bladder cancer. Preliminary report" <i>Int. J. Cancer</i> (1984) 34:359-367.
	94.	Neuwelt et al., "Modification of the blood-brain barrier in the chemotherapy of malignant brain tumors" <i>FASEB J.</i> (1984) 43:214-219.
	95.	Baba et al., "Intracarotid infusion of leukotriene C <sub>4</sub> selectively increases blood-brain barrier permeability after focal ischemia in rats" <i>J. Cerebral Blood Flow Metab.</i> (1991) 11:638-643.
	96.	Gennuso et al., "Effect of blood-brain barrier and blood-tumor barrier modification on central nervous system liposomal uptake" <i>Cancer Invest.</i> (1993) 11:118-128.
	97.	Levin, "Relationship of octanol/water partition coefficient and molecular weight to rat brain capillary permeability" <i>J. Med. Chem.</i> (1980) 23:682-684.
	98.	Kostis et al., "Central nervous system effects of HMG CoA reductase inhibitors: Lovastatin and pravastatin on sleep and cognitive performance in patients with hypercholesterolemia" <i>J. Clin. Pharmacol.</i> (1994) 34:989-996.
	99.	Bickel et al., "Pharmacologic effects <i>in vivo</i> in brain by vector-mediated peptide drug delivery" <i>Proc. Natl. Acad. Sci. USA</i> (1993) 90:2618-2622.

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## OTHER DOCUMENTS

Examiner Initials	Ref. No.	Title
	100.	Buck et al., "Production of Human Monoclonal Antibodies" <i>Monoclonal Antibodies and Cell Lines</i> , 1984, Plenum Press, New York, Chapter 11, pages 275-308.
	101.	Ma et al., "Generation and Assembly of Secretory Antibodies in Plants" <i>Science</i> (1995) 268:716-719.
	102.	Gacesa and Ramji, <i>Vectors</i> , John Wiley & Sons, 1994. Title page & table of contents are enclosed.
	103.	Pardridge, <i>Peptide Drug Delivery to the Brain</i> , 1991, Raven Press, New York. Title page and table of contents are enclosed.
	104.	Ballou et al., "Tumor labeling in vivo using cyanine-conjugated monoclonal antibodies" <i>Cancer Immunol. Immunother.</i> (1995) 41:257-263.

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